Chapter 15
Exploring the Links between Structural Capital, Knowledge Sharing, Innovation Capability and Business Competitiveness: An Empirical Study

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ABSTRACT
The aim of this chapter is to analyze the degree of influence of different organizational enablers (i.e., “structural capital”) on knowledge sharing, as well as the influence of the latter and other structural capital components on innovation capability, both from a theoretical and empirical perspective. Additionally, the relevance of different innovation capability dimensions (i.e., ideation, project management, and timeliness and cost efficiency) on business competitiveness will be examined. For these relationships to be tested, an empirical study has been carried out among Spanish manufacturing firms with more than 50 employees and with R&D activities. To this end, a questionnaire has been designed and submitted to the CEOs of the companies making up the target population of the research. Structural equation modelling (SEM) based on partial least squares (PLS) has then been applied in order to test the main hypotheses of the research.

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INTRODUCTION

In today’s economy, innovation is considered to be one of the main drivers of business competitiveness, if not the most relevant one (Drucker, 1988; Shapiro & Varian, 1998; Sveiby, 1997). Superior innovation provides companies with the opportunity to grow faster, better and smarter than their competitors and, ultimately, to influence the direction taken by their industry (Davila, Epstein & Shelton, 2006). Therefore, understanding the sources of successful innovation has become a major challenge in academic research.

Since the seminal works by Nonaka in 1991, and Nonaka & Takeuchi in 1995, the concept of innovation has been closely related to that of “knowledge creation”. Along these lines, it is generally assumed that the process of innovation consists of an ongoing pursuit of harnessing new and unique knowledge (Nonaka & Takeuchi, 1995; Subramaniam & Youndt, 2005).

According to Nonaka, von Krogh & Voelpel (2006), knowledge creation involves a continuous process through which one overcomes the individual boundaries and constraints imposed by information and past learning by acquiring a new context, a new view of the world and new knowledge. By interacting and sharing tacit and explicit knowledge with others, the individual enhances the capacity to define a situation or problem, and apply his or her knowledge so as to act and specifically solve the problem. Therefore, an organizational context intended to foster knowledge creation and innovation should promote the exchange of ideas and experiences among people.

In the case of this paper, this organizational context is going to be analyzed through the lenses of “intellectual capital” (IC) and, through the lenses of “structural capital” in particular. The latter refers to what remains within the company when the employees have left home (Edvinsson & Richtner, 1999; European Commission, 2006). It could be embedded both in the organization (internal structure) and in the relationships that the company has with its external stakeholders (external structure). Organizational design, organizational culture, policies and guidelines, strategy, technological infrastructure (i.e. technological capital) and external alliances are all structural capital components which shape the company’s organizational context and which could affect knowledge sharing and innovation. The human dimension of IC (people knowledge, skills and abilities), although a relevant one, will not be considered in this research.

With this in mind, this chapter pursues a two-fold objective:

• On the one hand, it aims to clarify theoretical relationships between intellectual capital (and structural capital in particular), knowledge sharing, knowledge creation, innovation capability and business competitiveness.

• On the other hand, it aspires to provide empirical evidence about the influence of: (1) several structural capital components on knowledge sharing; (2) knowledge sharing mechanisms and other structural capital components on innovation capability; and (3) different innovation capability dimensions on business competitiveness. Additionally, the role of technology intensity as a moderator variable (i.e. as a variable that could affect the nature – positive or negative – and the strength of the aforementioned relationships) will be examined.

Actually, technology intensity represents an indirect way of measuring the degree of complexity of the knowledge being dealt with in an organization. In the case of a high-tech company (for instance, in the case of an electronic device manufacturer or in the case of a firm in the aerospace industry), the nature of the knowledge involved in technological innovation (i.e. the development of new products and processes) is